
CST1204: Introduction to Databases

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Week 6 Session 1

10/2/2019

Agenda

- Single Table Queries
- Sorting via ORDER BY

SELECT Statement

- When running SELECT, DBMS will go through each row where the boolean expression is TRUE and select the columns specified in the SELECT clause.
- What are the results of the following two queries?

```
SELECT 'This is a test'
```

```
SELECT 'This is another test'  
FROM rep
```

SELECT DISTINCT

- SELECT DISTINCT

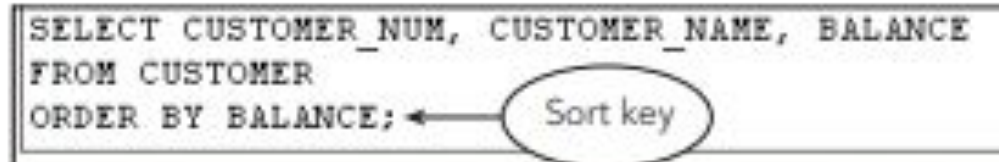
```
SELECT DISTINCT REP_NUM  
FROM CUSTOMER
```

```
SELECT DISTINCT 'This is another test'  
FROM rep
```

Sorting: ORDER BY Clause

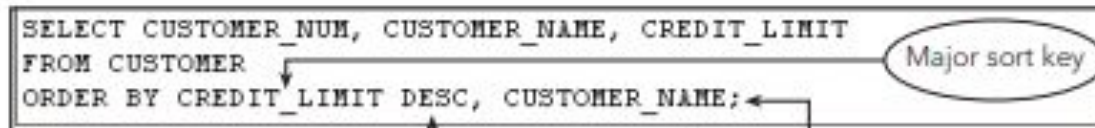
- ORDER BY clause (Ch4 Pg 111): Always at the end of statement

```
SELECT CUSTOMER_NUM, CUSTOMER_NAME, BALANCE  
FROM CUSTOMER  
ORDER BY BALANCE; ← Sort key
```

A diagram showing a SQL query snippet. The text is 'SELECT CUSTOMER_NUM, CUSTOMER_NAME, BALANCE FROM CUSTOMER ORDER BY BALANCE;'. An arrow points from an oval labeled 'Sort key' to the 'BALANCE' column in the ORDER BY clause.

- Sorting order: Descending (DESC)/Ascending (ASC, default)

```
SELECT CUSTOMER_NUM, CUSTOMER_NAME, CREDIT_LIMIT  
FROM CUSTOMER  
ORDER BY CREDIT_LIMIT DESC, CUSTOMER_NAME; ← Major sort key
```

A diagram showing a SQL query snippet. The text is 'SELECT CUSTOMER_NUM, CUSTOMER_NAME, CREDIT_LIMIT FROM CUSTOMER ORDER BY CREDIT_LIMIT DESC, CUSTOMER_NAME;'. An arrow points from an oval labeled 'Major sort key' to the 'CREDIT_LIMIT' column in the ORDER BY clause. Another arrow points from the 'CREDIT_LIMIT' column to the 'DESC' keyword. A third arrow points from the 'CUSTOMER_NAME' column to the end of the ORDER BY clause.

Sorting Options

- Can have multiple columns, and the order of columns determines sorting priorities
- Can list by name vs by number
- ORDER BY is optional, and is always the *LAST* clause of a statement.

Review TEST ONE

- Q1: 3 entities. Each 1 point.
 - Missing entity: -1
 - Missing primary key or partially wrong presentation: -0.5
- Q2: 1NF, 2NF, 3NF. Each 1 point.
 - Missing all entities: -1
 - Missing one or two entity, missing primary key, or partially wrong decomposition: -0.5
 - Mistakes in previous NF will not result in point deduction in next NF.

Review TEST ONE

- Q3: 4 CREATE statements. Each 1 point.
 - Clear mistakes in syntax (missing table name e.g., missing data type for all columns): -1
 - Wrong compound primary key syntax: -1
 - Missing data type or apparent typo: -0.5
 - Missing primary key: -0.5
- Q4: ERD. 1 bonus point.
 - Missing all entity/relationship, or wrong representation of all: -1
 - Missing one or two entity/relationship: -0.5
 - Wrong relationship or wrong cardinality: -0.5

Homework Review

- Chapter 6 exercise questions for TAL Distributors

TEST TWO on 10/21

- Same pattern for TEST TWO, THREE, FOUR, and FINAL
 - CREATE based on entity/relationship description
 - INSERT INTO
 - Update value in a column in the given row: regular value or NULL
 - Add a new column or modify an existing column
 - All sorts of SELECT ... WHERE
 - DROP this table

TEST Tips

- How to achieve 10% increase or decrease?

```
SET PRICE = PRICE * 0.90          -- 10% decrease
```

```
SET SALARY = SALARY * 1.10        -- 10% increase
```

- How to only see distinct values?

```
SELECT DISTINCT <column>
```

Homework

- Chapter 6 exercise questions for Colonial Adventure Tours